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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KARL J. DUYCK, THEODORE E. NALESNIK,
JOHN R. BARANSKI, CYRIL A. MIGDAL,
and REBECCA R. SEIBERT

Appeal 2008-5105
Application 10/825,065
Technology Center 1700

Decided:¹ February 17, 2009

Before CHUNG K. PAK, PETER F. KRATZ, and MARK NAGUMO,
Administrative Patent Judges.

KRATZ, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's refusal to allow claims 1, 5-9, 11-19, and 22. We have

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

jurisdiction pursuant to 35 U.S.C. § 6. Oral arguments were presented on December 09, 2008.

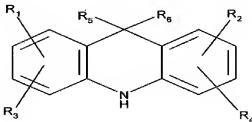
STATEMENT OF THE CASE

Appellants' claimed invention is directed to a composition comprising a lubricant and a mixture of additives, which additives are said to be anti-oxidants; that is, they have anti-oxidative functionality. The anti-oxidant additive mixture includes at least one acridan of a specified formula and a residual diphenylamine, i.e., an alkylated diphenylamine of a type that could be used in preparing Appellants' acridan component via a partial condensation reaction with ketone or aldehyde. Appellants also claim a method of making the lubricant composition including a lubricant and an anti-oxidation additive mixture of acridan and residual. Claim 1 is illustrative and reproduced below:

1. A composition comprising:

A) a lubricant; and

B) a mixture of antioxidants, wherein said mixture is prepared by the partial condensation of an alkylated diphenylamine selected from the group consisting of mono-, di-, and tri-nonylated diphenylamine and butylated octylated diphenylamine with an aldehyde or ketone in the presence of an acidic catalyst to yield at least one acridan of the general formula:



along with residual alkylated diphenylamine remaining after said partial condensation;

wherein:

R₁, R₂, R₃, and R₄ are independently selected from the group consisting of hydrogen, butyl, octyl, and nonyl, provided that at least one of R₁, R₂, R₃, and R₄ is not hydrogen, and R₅ and R₆ are independently selected from the group consisting of C₁ to C₂₀ hydrocarbyl and hydrogen;

wherein, at the termination of said condensation, residual alkylated diphenylamine is not separated from the acridan product and remains in said mixture of antioxidants with said acridan.

The Examiner relies on the following prior art references as evidence in rejecting the appealed claims:

Wheeler	5,268,394	Dec. 7, 1993
Downs	5,310,491	May 10, 1994
Deetman	US RE37,101	Mar. 20, 2001

The Examiner maintains the following rejection:

Claims 1, 5-9, 11-19, and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wheeler in view of Deetman and Downs.

At the outset, we note that Appellants do not present separate argument that is reasonably specific to the individual claims on appeal in the opening Appeal Brief. Thus, the appeal was brought on a basis such that commonly rejected claims 1, 5-9, 11-19, and 22 are considered as standing or falling together. Accordingly, we select claim 1 as the representative claim on which we shall focus in deciding this appeal.²

² While claim 1 is drawn to a product lubricant that has a somewhat narrower acridan formula requirement than that required by independent

All arguments not timely raised in the principal Appeal Brief are considered waived. 37 C.F.R. § 41.37(c)(1)(vii). *See also Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1320-21 n. 3 (Fed. Cir. 2005). In this regard, Appellants' arguments, as appear only in the Reply Brief, are untimely and will not be considered.

Appellants contend that Wheeler only teaches using acridans that have been separated from any diphenylamine employed in their production as a component acridan of their lubricant additives including, *inter alia*, diphenylamine and acridan (App. Br. 10). Hence, Appellants assert that Wheeler “fails to disclose or suggest the economically desirable benefit of [their] invention, i.e., the ability to omit the separation step of the newly formed acridan and the residual alkylated diphenyl amine” (App. Br. 11). In other words, Appellants maintain that Wheeler would have only suggested the use of an acridan that is separated from any non-reacted diphenylamine as part of a lubricant composition to one of ordinary skill in the art at the time of the invention.

ISSUE

Have Appellants identified reversible error in the Examiner's obviousness rejection over the applied prior art by the above-noted assertions respecting the claimed product-by-process limitation, as more fully presented in the Appeal Brief?

process claims 11 and 22, the issues presented are substantially the same for the process claims and the product claims given the common arguments presented by Appellants in the Appeal Brief and for reasons evinced by the Appeal record before us. In this regard, the process claims define the composition of an added antioxidant mixture via a product-by-process limitation.

SUMMARY DISPOSITION

We answer this question in the negative for reasons set forth in the Examiner's Answer and as further explained below. Therefore, we affirm the Examiner's obviousness rejection.

PRINCIPLES OF LAW

On appeal to this Board, Appellants must show that the Examiner erred in finally rejecting the claims. *Cf. In re Kahn*, 441 F.3d 977, 985-986 (Fed. Cir. 2006); *see also* 37 C.F.R. § 41.37(c)(1)(vii).

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). “[A]nalysis [of whether the subject matter of a claim is obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. Teleflex, Inc.*, 127 S. Ct. 1727, 1741 (2007). *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (“[T]he absence of specific findings on the level of skill in the art does not give rise to reversible error ‘where the prior art itself reflects an appropriate level and [the] need for testimony is not shown’”).

“The person of ordinary skill [in the art] is a hypothetical person who is presumed to [know the relevant] prior art. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986).

“[A] reasonable expectation of success, not absolute predictability” supports a conclusion of obviousness. *In re Longi*, 759 F.2d 887, 897 (Fed. Cir. 1985). Therefore, an obviousness rejection predicated on selection of one or more components from numerous possible choices may be appropriate if the prior art provides direction as to which of many possible choices is likely to be successful. *See PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1364 (Fed. Cir. 2007); *In re Arkley*, 455 F.2d 586, 587-88 (CCPA 1972) (noting that “picking and choosing may be entirely proper in the making of a 103, obviousness rejection, where the applicant must be afforded an opportunity to rebut with objective evidence any inference of obviousness which may arise from the similarity of the subject matter which he claims to the prior art”). Moreover, the fact that a reference “discloses a multitude of effective combinations does not render any particular formulation less obvious.” *Merck & Co., Inc. v. Biocraft Labs*, 874 F.2d 804, 808 (Fed. Cir. 1989) (*citing In re Corkill*, 771 F.2d 1496, 1500 (Fed. Cir. 1985) (obviousness rejection of claims affirmed in light of prior art teaching that “hydrated zeolites will work” in detergent formulations, even though “the inventors selected the zeolites of the claims from among ‘thousands’ of compounds”)); *see also, In re Susi*, 440 F.2d 442, 445 (CCPA 1971) (obviousness rejection affirmed where the disclosure of the prior art was “huge, but it undeniably include[d] at least some of the compounds recited in appellant’s generic claims and [was] of a class of chemicals to be used for the same purpose as appellant’s additives”).

During examination, claims terms must be given “their broadest reasonable construction consistent with the specification.” *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1378-79 (Fed. Cir. 2007).

The method of claiming a product by listing the steps to obtain it, commonly called a product-by-process claim, is perfectly acceptable and does not inherently conflict with the second paragraph of 35 U.S.C. §112, so long as the claims particularly point out and distinctly claim the product for which protection is sought. *In re Brown*, 459 F.2d 531, 535 (CCPA 1972).

However, patentability is determined by the product itself, and does not depend on the method of production. *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985).

FINDINGS OF FACT AND ANALYSIS

Appellants acknowledge that the reaction products of an aliphatic ketone (such as acetone), and a diarylamine, such as diphenyl amine (ADPA), comprise known antioxidants (Specification 1-3). Moreover, Appellants acknowledge that “[i]t is known from U.S. Patent No. 5,268,394 [Wheeler] that acridans can be used as lubricating additives. This patent also discloses combining the acridans with certain amine stabilizers, phenolic stabilizers, and phosphite stabilizers” (Specification 9). Also, *see* App. Br. 10 and Spec. 3-4.

Further concerning these acknowledged facts by Appellants, the Examiner has likewise found that Wheeler discloses or suggests that the acridan component of their lubricant composition includes an alkylated acridan including compounds of a structural formula that are embraced by

the acridan component required by representative claim 1 (Ans. 3; Wheeler; col. 3, ll. 1-15 and 62-65; col. 2, ll. 17-66). Also, the Examiner has found that Wheeler discloses the use of diphenyl amine compounds together with acridan as additive components of a lubricant composition (Ans. 3; Wheeler; col. 3, ll. 15-61). As evident by a review of structure II of Wheeler, the amine stabilizer co-additive component disclosure of Wheeler is inclusive of alkylated amines that correspond to the alkylated amine component required by representative claim 1. Appellants have not argued otherwise in their opening Appeal Brief.

In addition, we find that Wheeler discloses NAUGALUBE™ 640 and NAUGARD™ PS-30 (butylated octylated diphenylamine antioxidant) as two of several highlighted commercially available amine anti-oxidants that can be used in forming a combination acridan and amine stabilizer additive (col. 4, ll. 17-30). Wheeler's acridan structure I is inclusive of alkyl groups (including methyl, butyl, and octyl or C1-C3) groups and is disclosed as being synthesized from the reaction of a ketone and dialkylated diphenyl amine (Wheeler; col. 3, ll. 15 and col. 4, ll. 55-66).

Appellants' Specification identifies the aforementioned NAUGALUBE™ 640 employed by Wheeler as a known commercial product comprising butylated (30%) octylated (24%) diphenylamine (Specification 19). NAUGALUBE™ 640 is a preferred diphenylamine antioxidant useful in preparing an acridan and diphenylamine additive (Additive B) according to Applicants' invention (Specification 19, 26-27).

Moreover, the Examiner relies on Deetman for its disclosure of an alkyl substituted diphenylamine (Irganox® L57; Ciba-Geigy) as a known

commercially available prior art lubricant antioxidant additive (Ans. 4; Deetman; col. 9, l. 55 - col. 10, l. 18).

Downs discloses that Irganox® L57 “is a mixture of butylated and octylated diphenylamines” (col. 5, ll. 58-61).

As evident from the reproduction above, representative claim 1 specifies butylated octylated diphenylamine as one of several diphenylamine compounds embraced by the claimed product composition as a part thereof (residual diphenylamine). While not limited thereto, representative claim 1 covers compositions comprising an alkylated acridan component product that could be made using butylated octylated diphenylamine as one of the reactants for synthesizing an acridan component for the claimed lubricant composition product together with residual butylated octylated diphenylamine.

Wheeler discloses that acridans yield “increased performance in systems where simply increasing antioxidant levels shows little or no increase in performance” (col. 4, ll. 35-37). Also, Wheeler does not identify any detriment to the selection of any particular acridan and any particular alkyl diphenylamine component for use together from among those components that are embraced by Wheeler’s disclosure of these lubricant additive components.

Given the above, we find that Wheeler alone or in combination with Deetman and Downs would have suggested to one of ordinary skill in the art a lubricant composition including a stabilizing anti-oxidant additive combination including an alkyl diphenylamine and an acridan selected from among those disclosed as useful by Wheeler. One of ordinary skill in the art

would have been reasonably led to select a lubricant composition that includes an acridan and an alkyl diphenylamine within the scope of representative claim 1 particularly given the identification of available commercial sources for an alkyl diphenylamine within the scope of the requirements of representative claim 1 for that component by Wheeler.

Moreover and while not essential to the Examiner's prima facie obvious determination given the product-by-process format of representative claim 1 and the limited argument presented in the opening Appeal Brief, we have little doubt that one of ordinary skill in the art would have readily recognized that the commercial sources for alkyl diphenylamine components disclosed by Wheeler would have been available as sources of alkyl diphenylamine that would be expected to be useful for synthesis of an acridan in accordance with structure I of Wheeler. This is so given the acridan synthesis disclosure of Wheeler in combination with the acridan structural blueprint of Wheeler, and the level of skill in the art represented by the prior art of record, including Appellants' admissions in the Specification. Such an acridan product, whether made by the method of Wheeler or another art recognized route, would have been a ready source of acridan for employment together with alkyl diphenylamine of the same or another type as part or all of a combined lubricant additive mixture in accordance with the teachings of Wheeler.

Appellants basically argue that Wheeler does not suggest what Appellants assert as the "gist of the present invention"; that is, that acridan separation from the diphenylamine employed in their production "is unnecessary" and not suggested by Wheeler (App. Br. 10-11). In addition to

other reasons furnished by the Examiner in the Examiner's Answer and as would have been apparent to an ordinarily skilled artisan upon a fair reading of the teachings of the applied references, this argument is not persuasive foremost because representative claim 1 specifies a product using a product-by process limitation³. Hence, representative claim 1 is not drawn to a process for producing acridan with a process proviso that at least some excess reactant diphenylamine is not separated from the acridan product together with the use of the non-separated combination as a lubricant additive mixture. When the claim does not recite allegedly distinguishable features, Appellants cannot rely on them to establish patentability. *See In re Self*, 671 F.2d 1344, 1350-1351 (1982).

As a final point, we note that Appellants have not presented argument supported by evidence, such as evidence of unexpected results commensurate in scope with the claimed subject matter that serves to refute the prima facie case of obviousness presented by the Examiner.

CONCLUSION

On this appeal record, Appellants have not identified reversible error in the Examiner's obviousness rejection of representative claim 1 over the applied prior art based on the arguments submitted asserting Wheeler would have only suggested the use of an acridan that is separated from any non-reacted diphenylamine as part of a lubricant composition; that is, an alleged

³ Similarly, a lubricant additive mixture limitation specified in each of claims 11 and 22 is a product made by a process (product by process) limitation: that is, the process of making the lubricant additive describes the additive of claims 11 and 21 and is not a separate process limitation that is part of an over-all process of making the lubricant mixture recited in claim 11.

lack of teaching or suggestion of an acridan synthesis method limitation (elimination of a separation step) because the claimed subject matter, as properly construed, is not so limited.

ORDER

The decision of the Examiner to reject claims 1, 5-9, 11-19, and 22 under 35 U.S.C. § 103(a) as being unpatentable over Wheeler in view of Deetman and Downs is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) .

AFFIRMED

PL Initial:
sld

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